Habitat Spot-Check Surveys, Restigouche River System, 1981

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ABSTRACT

Pickard, R.P., R.S. Blair and J.L. Peppar. 1983. Habitat spot-check surveys, Restigouche River system, 1981. Can. Data Rep. Fish. Aquat. Sci. No. 378. v + 25 p.

During July-September, 1981, electrofishing methods were used to conduct habitat spot-check surveys throughout the Restigouche River system, to determine the presence or absence of Atlantic salmon fry and parr in some of the smaller tributary streams. The surveys included streams of Restigouche, Madawaska and Victoria counties entering the Restigouche River proper and three of its five major tributaries.

Data obtained at each site included habitat and substrate characteristics, water characteristics and fish species present.

Key words: Restigouche River system, spot-checks, habitat, juvenile Atlantic salmon, other species, small tributaries, substrate and water characteristics.

RÉSUMÉ

Pickard, R.P., R.S. Blair and J.L. Peppar. 1983. Habitat spot-check surveys, Restigouche River system, 1981. Can. Data Rep. Fish. Aquat. Sci. No. 378. v + 25 p.

De juillet à septembre 1981, des vérifications de l'habitat dans le réseau de la rivière Restigouche ont été effectués par électro-pêche dans le but de déterminer la présence ou l'absence d'alevins et de tacons de saumon atlantique dans certaisn petits tributaries. Les cours d'eau ainsi étudiés ont été ceux des comtés de Restigouche, de Madawaska et de Victoria se déversant dans la rivière Restigouche même et dans trois de ses principaux tributaires.

A chaque site, on a recueilli des données, entre autres, sur les caractéristiques de l'habitat et du substrat, les propriétés de l'eau et les espèces de poissons présentes.

INTRODUCTION

During the period July 13-September 4, 1981, electrofishing methods were used by a two-man crew to conduct habitat spot-check surveys throughout tributaries of the Restigouche River system, in a preliminary attempt to determine the presence or absence of salmon fry and parr in these smaller streams (Fig.). The field survey included Restigouche, Madawaska and Victoria county streams entering the Restigouche River proper and three of its five major tributaries (Kedgwick, Little Main Restigouche and Upsalquitch rivers).

Forty-nine streams (38 in Restigouche County, 8 in Madawaska County and 3 in Victoria County) were examined. On each stream, attempts were made to document the presence or absence of salmon fry and parr, by selecting sites on the basis of apparent suitability as salmon habitat and gathering various physical and biological data. However, in some cases, accessibility was the determining factor (i.e., some marginal sites were checked because of severely limited access to the stream).

Data obtained at each site included habitat and substrate characteristics (length, width, depth, bottom type and composition, and extent of habitat types); water characteristics (temperature and conductivity); and fish species present (by spot-check electrofishing). To supplement field data, information on characteristics such as stream length was obtained from National Topographic System maps (scale 1:50,000).

METHODS AND STANDARDS USED

NAME OF STREAM

Name given in Gazetteer of Canada - New Brunswick, 1972.

TRIBUTARY TO

Determined from Gazetteer of Canada - New Brunswick, 1972, and National Topographic System maps.

LOCATION OF STREAM

Latitude and longitude of mouth, given in Gazetter of Canada - New Brunswick, 1972.

DIRECTION OF FLOW

Determined from National Topographic System maps (major directional changes are indicated; the term "generally" indicates that while direction may change substantially for short distances, the overall flow of stream or part thereof tends generally in the given direction).

LENGTH OF STREAM

Continuous flow (to nearest 0.5 km), main stem only, determined from National Topographic System maps. Length in parentheses () indicates map showed entire length of stream to be intermittent; thus, length in this case is the distance from mouth to sampling site.

SAMPLING SITE

Attempts were made to choose sites containing areas of approximately 280 m^2 - 360 m^2 (350-450 yd^2). This was not always possible, especially on smaller streams, where thick overgrowth, deep pools or swift flow limited the area which could be effectively spot-check electrofished.

Location

Distance from mouth of stream (to nearest 0.5 km) unless stated otherwise - determined from National Topographic System maps.

Grid Reference

Universal Transverse Mercator Grid Reference - determined from National Topographic System maps.

Length

Average of two measurements (to nearest 0.1 m), taken at each side of the stream, from upper limit to lower limit of each sampling site.

Width

Average of three measurements (to nearest 0.1 m), taken across the stream, over the length examined at each sampling site (upper and lower limits and mid-point).

Depths

Average of three measurements (to nearest cm), taken at upper and lower limits and mid-point, over length of stream examined at each sampling site. Measurements were taken at one-quarter, one-half and three-quarters of stream width. "Left" and "right" are defined when facing downstream. Maximum - deepest point within site.

Bottom Composition

Particle size as defined by Herrington and Dunham 1967:

Bedrock
Slate
Boulder (rocks >30.5 cm diameter)
Rubble (rocks 7.6-30.5 cm diameter)
Gravel (rocks 0.3-7.6 cm diameter)
Sand and Silt (particles <0.3 cm diameter)
Mud
Hardpan (hard deposits of clay)
Detritus (leaves, twigs, bark, etc.)
Debris (rubbish, litter, etc.)

Water Temperature and Conductivity

Measured with a YSI Model 33 S-C-T meter.

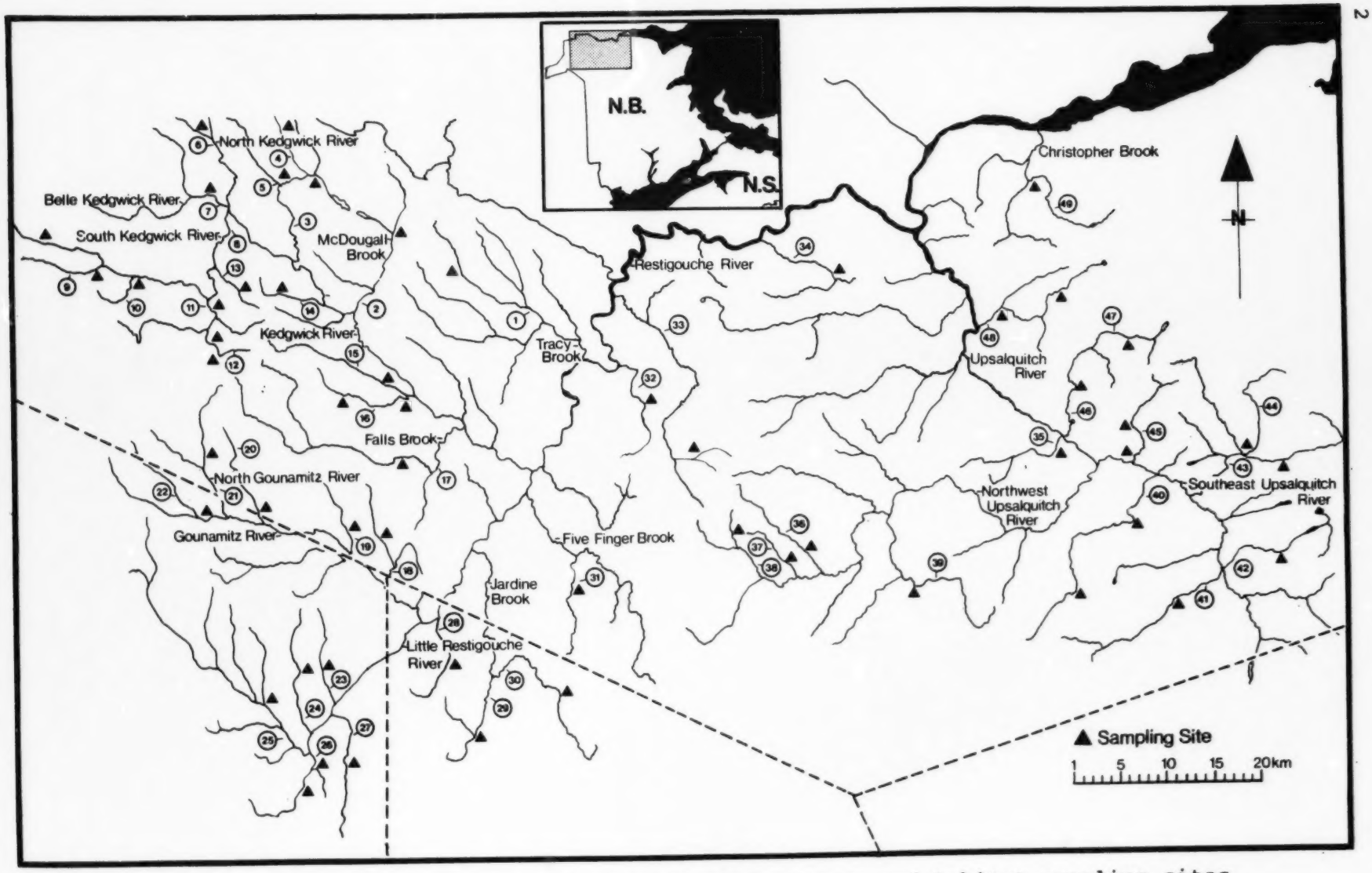

FIG. Restigouche River system, showing the location of streams and habitat sampling sites.

Electrofishing

Conducted with a Dirigo, Series 600, Electrofisher. The following list includes the "species-groups" obtained while spot-check electrofishing. Species named represent the most commonly captured (or in some cases, exclusively captured) representatives of each of these "species-groups". Common and scientific names given are those recommended by the American Fisheries Society (1970).

Biological sampling was not carried out at all sites. Apparent unsuitable conditions, such as stream flow, stream width or depth, bottom type or composition and overgrowth or limited access were factors that determined the absence of biological sampling.

STREAM AND HABITAT DATA

Habitat data on the individual streams are presented in the following pages. Locations of all streams sampled are identified on the accompanying map by numbered circles. The order and presentation is counter-clockwise around the system, beginning on the north side of the Restigouche River system (North Branch Tracy Brook) and ending on the south side of the system (East Branch Christopher Brook) (Fig.). Locations of sampling sites are indicated on the key map by a triangular symbol (▲).

Designation in tables (Species group)	Species	
	Common name	Scientific name
Eel	American eel	*Anguilla rostrata*
Salmon	Atlantic salmon	*Salmo salar*
Trout	Brook trout	*Salvelinus fontinalis*
Dace	Blacknose dace	*Rhinichthys atratulus*
Sculpin	Slimy sculpin	*Cottus cognatus*

STREAM NAMES SHOWN NUMERICALLY ON KEY MAP

No.	Stream name
1	North Branch Tracy Brook
2	McDougall Brook
3	States Brook
4	North Branch States Brook
5	West Branch States Brook
6	Gin Creek
7	Belle Kedgwick River
8	South Branch Kedgwick River
9	Indian Brook
10	Portage Brook
11	Union Brook
12	East Branch Union Brook
13	Hornes Gulch
14	Fogs Brook
15	North Branch Clearwater Brook
16	South Branch Clearwater Brook
17	Falls Brook
18	Bells Brook
19	Big Brook
20	Cyr Brook
21	North Branch Gounamitz River
22	West Branch Gounamitz River
23	Rocky Brook
24	Cedar Brook
25	Little Main Restigouche River
26	Wagansis Brook
27	Hunter Brook
28	Boston Brook
29	Right Hand Branch Jardine Brook
30	East Jardine Brook
31	Little Five Finger Brook
32	Stillwater Brook
33	Whites Brook
34	Cheuters Brook
35	McDougalls Brook
36	Ruisseau Savage (Indian Brook)
37	McLeod Brook
38	Chisholm Brook
39	East Branch Oxford Brook
40	Jerry Ferguson Brook
41	Ramsay Brook
42	Murray Brook
43	Little Southeast Upsalquitch River
44	Middle Brook
45	Little Popelogan Brook
46	Popelogan River
47	Popelogan Lake Branch River
48	Berry Brook
49	East Branch Christopher Brook

Name of Stream: North Branch Tracy Brook

Tributary to: Tracy Brook

Location: 47°48'N; 67°28'W. Flows southeast into Tracy Brook.

Length: 17.5 km

Sampling Site #1:

Date: 29/7/81

Location: 10.5 km

Grid Reference: 056005

Description: Riffle area; pools negligible. Stream-bed composition - 70% gravel and 30% rubble. Surrounding countryside wooded; alders at both ends.

Length: 41.0 m

Width: 8.2 m

Depths: Right side - 15 cm
Middle - 17 cm
Left side - 30 cm
Maximum - 30 cm

Water Temperature: 4°C

Conductivity: 40 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	2
Trout (large)	1
Sculpin	56

Name of Stream: McDougall Brook

Tributary to: Kedgwick River

Location: 47°49'N; 67°44'W. Flows south-southwest into Kedgwick River.

Length: 19.5 km

Sampling Site #1:

Date: 6/8/81

Location: 10.5 km

Grid Reference: 986047

Description: Riffle-run area; pools negligible. Stream-bed composition - 80% gravel and 20% rubble. Surrounding countryside composed of partially cutover woodland on left and landing on right; alders at upper end.

Length: 38.0 m

Width: 6.0 m

Depths: Right side - 27 cm
Middle - 31 cm
Left side - 24.7 cm
Maximum - 46 cm

Water Temperature: 8.0°C

Conductivity: 65 µmhos

Biological Sampling:

Species group	Number
Salmon (large parr)	1
Trout (fry)	1
Trout (large)	3
Sculpin	76

Name of Stream: States Brook

Tributary to: Kedgwick River

Location: 47°52'N; 67°49'W. Flows south-east 6.5 km, swings west-south-west 4.5 km, then south-south-west 10.0 km into Kedgwick River.

Length: 21.0 km

Sampling Site #1:

Date: 24/8/81

Location: 14.5 km

Grid Reference: 902107

Description: Riffle area; pool, not extensive, in upper left. Stream-bed composition - 50% gravel and 50% rubble. Surrounding countryside wooded; alders along right bank and upper two-thirds of left bank.

Length: 28.0 m

Width: 8.3 m

Depths: Right side - 16 cm
Middle - 32 cm
Left side - 23 cm
Maximum - 54 cm

Water Temperature: 6°C

Conductivity: 60 µmhos

Biological Sampling:

Species group	Number
Sculpin	29

Name of Stream: North Branch States Brook

Tributary to: States Brook

Location: 47°57'N; 67°48'W. Flows south-east into States Brook.

Length: 7.0 km

Sampling Site #1:

Date: 6/8/81

Location: 5.5 km

Grid Reference: 858148

Description: Riffle-run area; pool along right lower quarter. Stream-bed composition - 80% gravel and 20% rubble. Surrounding countryside wooded.

Length: 22.5 m

Width: 4.5 m

Depths: Right side - 49 cm
Middle - 35 cm
Left side - 11 cm
Maximum - 70 cm

Water Temperature: 5°C

Conductivity: 235 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	14
Trout (large)	2
Sculpin	43

Name of Stream: West Branch States Brook

Tributary to: States Brook

Location: 47°56'N; 67°51'W. Flows southeast into States Brook.

Length: 7.0 km

Sampling Site #1:

Date: 24/8/81

Location: 1.5 km

Grid Reference: 854104

Description: Riffle-run area; bar within left middle third; pools negligible. Stream-bed composition - 70% rubble, 25% gravel and 5% sand and silt. Surrounding countryside composed of woods on right bank and landing on left; brush along landing edge.

Length: 41.4 m

Width: 5.7 m

Depths: Right side - 25 cm
Middle - 28 cm
Left side - 30 cm
Maximum - 47 cm

Water Temperature: 4°C

Conductivity: 100 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	2
Trout (large)	2
Sculpin	20

Name of Stream: Gin Creek

Tributary to: North Branch Kedgwick River

Location: 47°59'N; 67°57'W. Flows southeast into North Branch Kedgwick River.

Length: (2.5 km)

Sampling Site #1:

Date: 2/9/81

Location: 2.5 km

Grid Reference: 773154

Description: Stream sluggish (no riffle), 3 m-5 m wide and 0.5 m-1.5 m deep. Stream-bed composition - gravel, sand, silt and detritus. Surrounding countryside wooded; thick overgrowth of alders.

Name of Stream: Belle Kedgwick River

Tributary to: North Branch Kedgwick River

Location: 47°55'N; 67°55'W. Flows generally east into North Branch Kedgwick River.

Length: 13.0 km

Sampling Site #1:

Date: 2/9/81

Location: 2.5 km

Grid Reference: 793082

Description: Riffle-run area; pool, not extensive, in upper right. Stream-bed composition - 60% rubble, 25% gravel and 15% boulder. Surrounding countryside wooded; alders along lower half.

Length: 38.5 m

Width: 10.6 m

Depths: Right side - 15 cm
Middle - 36 cm
Left side - 26 cm
Maximum - 60 cm

Water Temperature: 7°C

Conductivity: 100 µmhos

Biological Sampling:

Species group	Number
Salmon (small parr)	5
Trout (fry)	3
Trout (large)	4
Sculpin	53

Name of Stream: South Branch Kedgwick River

Tributary to: Kedgwick River

Location: 47°54'N; 67°55'W. Flows east-southeast 35.5 km, then swings north-northeast 12.5 km into Kedgwick River.

Length: 48.0 km

Sampling Site #1:

Date: 26/8/81

Location: 34.5 km

Grid Reference: 625027

Description: Riffle-run area; pool, not extensive, in lower right. Stream-bed composition - 75% rubble, 15% gravel and 10% boulder. Surrounding countryside wooded; alders along right bank and upper third of left bank.

Length: 47.0 m

Width: 9.3 m

Depths: Right side - 40 cm
Middle - 33 cm
Left side - 17 cm
Maximum - 54 cm

Water Temperature: 6°C

Conductivity: 60 µmhos

Biological Sampling:

Species group	Number
Salmon (fry)	2
Trout (fry)	1
Sculpin	66

Name of Stream: Indian Brook

Tributary to: South Branch Kedgwick River

Location: 47°51'N; 68°05'W. Flows generally east into South Branch Kedgwick River.

Length: 7.5 km

Sampling Site #1:

Date: 26/8/81

Location: <0.5 km

Grid Reference: 687007

Description: Stream slow, 3 m-4 m wide and 30 cm-50 cm deep. Stream-bed composition - gravel, sand and silt. Surrounding countryside wooded; overgrown with alders.

Name of Stream: Portage Brook

Tributary to: South Branch Kedgwick River

Location: 47°51'N; 68°02'W. Flows east-southeast 2.5 km, then swings north-northeast 4.5 km into South Branch Kedgwick River.

Length: 7.0 km

Sampling Site #1:

Date: 26/8/81

Location: 0.5 km

Grid Reference: 719996

Description: Riffle-run area; pools in upper left and left middle third along right-angle bend. Stream-bed composition - 80% rubble, 10% gravel and 10% boulder. Surrounding countryside composed of clearing on right and at upper left banks; remainder wooded; alders at lower end.

Length: 37.6 m

Width: 5.2 m

Depths: Right side - 28 cm
Middle - 31 cm
Left side 22 cm
Maximum - 42 cm (excluding deep pool).

Water Temperature: 5°C

Conductivity: 50 µmhos

Biological Sampling:

Species group	Number
Salmon (large parr)	1
Trout (fry)	3
Trout (large)	2
Sculpin	38

Name of Stream: Union Brook

Tributary to: South Branch Kedgwick River

Location: 47°50'N; 67°57'W. Flows generally north into South Branch Kedgwick River.

Length: 7.0 km

Sampling Site #1:

Date: 28/7/81

Location: 1.0 km

Grid Reference: 797964

Description: Riffle-run area; pool, not extensive, in upper left. Stream-bed composition - 50% rubble, 45% gravel and 5% boulder and mud. Surrounding countryside wooded; clearing at lower left.

Length: 53.0 m

Width: 9.3 m

Depths: Right side - 20 cm
Middle - 27 cm
Left side - 30 cm
Maximum - 50 cm

Water Temperature: 10°C

Conductivity: 45 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	15
Trout (large)	4
Sculpin	47

Sampling Site #2:

Date: 21/8/81

Location: 7.0 km

Grid Reference: 802925

Description: Riffle-run area; pool, not extensive, in upper middle. Stream-bed composition - 80% rubble and 20% boulder. Surrounding countryside cutover woodland; alders along right bank and upper quarter of left bank.

Length: 23.0 m

Width: 6.7 m

Depths: Right side - 18 cm
Middle - 37 cm
Left side - 27 cm
Maximum - 57 cm

Water Temperature: 8°C

Conductivity: 40 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	5
Trout (large)	2
Sculpin	29

Name of Stream: East Branch Union Brook

Tributary to: Union Brook

Location: 47°47'N; 67°56'W. Flows west 1.5 km, then swings north-northwest 1.5 km into Union Brook.

Length: 3.0 km

Sampling Site #1:

Date: 5/8/81

Location: 1.5 km

Grid Reference: 812908

Description: Stream slow, 1.0 m-1.5 m wide and 15 cm-30 cm deep. Stream-bed composition - gravel and rubble. Surrounding countryside partially cutover woodland.

Name of Stream: Hornes Gulch

Tributary to: South Branch Kedgwick River

Location: 47°51'N; 67°56'W. Flows northwest into South Branch Kedgwick River.

Length: 6.5 km

Sampling Site #1:

Date: 5/8/81

Location: 3.5 km

Grid Reference: 823986

Description: Stream slow, 1.0 m-1.5 m wide and 15 cm-30 cm deep. Stream-bed composition - gravel and rubble. Surrounding countryside wooded.

Name of Stream: Fogs Brook

Tributary to: Kedgwick River

Location: 47°49'N; 67°47'W. Flows generally east into Kedgwick River.

Length: 7.5 km

Sampling Site #1:

Date: 25/8/81

Location: 5.0 km

Grid Reference: 869983

Description: Stream moderate flowing, 1.5 m-2.5 m wide and 30 cm-60 cm deep. Stream-bed composition - rubble and gravel. Surrounding countryside wooded; overgrown and frequent partial blockages by brush and fallen trees.

Name of Stream: North Branch Clearwater Brook

Tributary to: Clearwater Brook

Location: 47°44'N; 67°40'W. Flows east-southeast into Clearwater Brook.

Length: 16.0 km

Sampling Site #1:

Date: 27/7/81

Location: 3.5 km

Grid Reference: 971894

Description: Riffle area; pools negligible. Stream-bed composition - 70% rubble, 25% gravel and 5% boulder. Surrounding countryside partially cutover woodland; alders along left middle third and at lower right.

Length: 46.0 m

Width: 6.3 m

Depths: Right side - 22 cm
Middle - 26 cm
Left side - 18 cm
Maximum - 35 cm

Water Temperature: 7°C

Conductivity: 40 µmhos

Biological Sampling:

Species group	Number
Eel	1
Salmon (small parr)	14
Trout (fry)	24
Trout (large)	14
Sculpin	116

Name of Stream: South Branch Clearwater Brook

Tributary to: Clearwater Brook

Location: 47°44'N; 67°40'W. Flows generally east-southeast into Clearwater Brook.

Length: 10.5 km

Sampling Site #1:

Date: 25/8/81

Location: 0.5 km

Grid Reference: 001875

Description: Riffle-run area; pools negligible. Stream-bed composition - 60% rubble, 20% gravel and 20% boulder. Surrounding countryside composed of woods on right, clearing along left lower half and alders along left upper quarter.

Length: 28.0 m

Width: 7.4 m

Depths: Right side - 23 cm
Middle - 30 cm
Left side - 23 cm
Maximum - 45 cm

Water Temperature: 8°C

Conductivity: 35 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	39
Trout (large)	6

Sampling Site #2:

Date: 25/8/81

Location: 8.5 km

Grid Reference: 934877

Description: Riffle area; pools negligible. Stream-bed composition - 70% rubble, 20% gravel and 10% boulder. Surrounding countryside wooded; banks undercut and alders at lower right.

Length: 28.0 m

Width: 8.2 m

Depths: Right side - 21 cm
Middle - 19 cm
Left side - 28 cm
Maximum - 37 cm

Water Temperature: 6°C

Conductivity: 45 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	18
Trout (large)	25

Name of Stream: Falls Brook

Tributary to: Kedgwick River

Location: 47°43'N; 67°35'W. Flows generally east 14.5 km, then swings generally northeast 6.0 km into Kedgwick River.

Length: 22.5 km

Sampling Site #1:

Date: 3/9/81

Location: 12.5 km

Grid Reference: 007816

Description: Riffle area; small area of deadwater along left middle third; pool, not extensive, in upper middle. Stream-bed composition - 60% rubble, 20% gravel, 17% boulder and 3% sand and silt. Surrounding countryside composed of woods on right and landing on left; brush along landing edge in left lower two-thirds.

Length: 42.0 m

Width: 10.7 m

Depths: Right side - 18 cm
Middle - 26 cm
Left side - 20 cm
Maximum - 53 cm

Water Temperature: 7°C

Conductivity: 40 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	3
Trout (large)	2
Sculpin	60

Name of Stream: Bells Brook

Tributary to: Gounamitz River

Location: 47°33'N; 67°42'W. Flows generally south-southeast into Gounamitz River.

Length: 7.0 km

Sampling Site #1:

Date: 5/8/81

Location: 6.5 km

Grid Reference: 973731

Description: Riffle area; bar within left upper quarter; pools negligible. Stream-bed composition - 80% gravel and 20% rubble. Surrounding countryside wooded; alders at lower end.

Length: 39.5 m

Width: 5.4 m

Depths: Right side - 15 cm
Middle - 13 cm
Left side - 11 cm
Maximum - 23 cm

Water Temperature: 12°C

Conductivity: 75 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	11
Trout (large)	1
Sculpin	52

Name of Stream: Big Brook

Tributary to: Gounamitz River

Location: 47°35'N; 67°44'W. Flows south southeast into Gounamitz River.

Length: (3.0 km)

Sampling Site #1:

Date: 21/8/81

Location: 3.0 km

Grid Reference: 940740

Description: Riffle-run area; bars within left and middle lower quarter; pools negligible. Stream-bed composition - 80% rubble and 20% boulder. Surrounding countryside wooded.

Length: 24.0 m

Width: 8.9 m

Depths: Right side - 17 cm
Middle - 19 cm
Left side - 11 cm
Maximum - 39 cm

Water Temperature: 5°C

Conductivity: 160 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	19
Sculpin	34

Name of Stream: Cyr Brook

Tributary to: Gounamitz River

Location: 47°37'N; 67°52'W. Flows south-southeast into Gounamitz River.

Length: 8.0 km

Sampling Site #1:

Date: 25/8/81

Location: 2.0 km

Grid Reference: 850756

Description: Riffle area; bar within right upper half; pools in upper end and lower right. Stream-bed composition - 45% rubble, 45% boulder and 10% gravel. Surrounding countryside cutover woodland; alders along left bank and lower half of right bank.

Length: 26.5 m

Width: 6.5 m

Depths: Right side - 35 cm
Middle - 38 cm
Left side - 27 cm
Maximum - 58 cm

Water Temperature: 10°C

Conductivity: 30 µmhos

Biological Sampling:

Species group	Number
Salmon (large parr)	1
Trout (fry)	3
Sculpin	47

Name of Stream: North Branch Gounamitz River

Tributary to: Gounamitz River

Location: 47°37'N; 67°54'W. Flows generally south-southeast into Gounamitz River.

Length: 14.0 km

Sampling Site #1:

Date: 14/7/81

Location: 7.5 km

Grid Reference: 792816

Description: Riffle-run area; pools negligible. Stream-bed composition - 50% gravel and 50% rubble. Surrounding countryside partially cutover woodland; brush along banks.

Length: 36.0 m

Width: 5.5 m

Depths: Right side - 18 cm
Middle - 31 cm
Left side - 23 cm
Maximum - 46 cm

Water Temperature: 8°C

Conductivity: 30 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	3
Trout (large)	3
Sculpin	85

Name of Stream: West Branch Gounamitz River

Tributary to: Gounamitz River

Location: 47°37'N; 67°54'W. Flows southeast 6.0 km, then swings east 4.0 km into Gounamitz River.

Length: 10.0 km

Sampling Site #1:

Date: 21/8/81

Location: 4.5 km

Grid Reference: 784749

Description: Riffle-run area; bar within left lower third; pools negligible. Stream-bed composition - 100% rubble. Surrounding countryside cutover woodland; alders along right bank and upper two-thirds of left bank.

Length: 28.0 m

Width: 7.7 m

Depths: Right side - 27 cm
Middle - 22 cm
Left side - 17 cm
Maximum - 31 cm

Water Temperature: 7°C

Conductivity: 900 µmhos

Biological Sampling:

Species group	Number
Trout (large)	1
Sculpin	42

Name of Stream: Rocky Brook

Tributary to: Little Main Restigouche River

Location: 47°27'N; 67°46'W. Flows south-southeast into Little Main Restigouche River.

Length: (5.0 km)

Sampling Site #1:

Date: 20/8/81

Location: 5.0 km

Grid Reference: 917598

Description: Riffle area; pool along right upper quarter. Stream-bed composition - 95% rubble and 5% boulder. Surrounding countryside cutover woodland; brush along right bank.

Length: 38.0 m

Width: 6.3 m

Depths: Right side - 30 cm
Middle - 31 cm
Left side - 15 cm
Maximum - 52 cm (excluding deep pool)

Water Temperature: 10°C

Conductivity: 80 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	2
Sculpin	53

Name of Stream: Cedar Brook

Tributary to: Little Main Restigouche River

Location: 47°25'N; 67°48'W. Flows south-southeast into Little Main Restigouche River.

Length: 14.0 km

Sampling Site #1:

Date: 20/8/81

Location: 8.0 km

Grid Reference: 894591

Description: Riffle-run area; bar within middle lower half; pool, not extensive, in lower left. Stream-bed composition - 70% rubble, 25% gravel and 5% sand and silt. Surrounding countryside cutover woodland; alders along right lower two-thirds.

Length: 28.0 m

Width: 14.1 m

Depths: Right side - 29 cm
Middle - 23 cm
Left side - 41 cm
Maximum - 60 cm

Water Temperature: 10°C

Conductivity: 60 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	5
Sculpin	41

Name of Stream: Little Main Restigouche River

Tributary to: Restigouche River

Location: 47°40'N; 67°30'W. Flows southeast 33.0 km, then swings northeast 45.0 into Restigouche River.

Length: 78.0 km

Sampling Site #1:

Date: 27/8/81

Location: 52.0 km

Grid Reference: 862552

Description: Riffle-run area; small area of quiet water along right upper quarter; pool along left lower three-quarters. Stream-bed composition - 50% gravel and 50% rubble. Surrounding countryside wooded.

Length: 53.0 m

Width: 4.5 m (approximately half the width of river)

Depths: Right side - 16 cm
Middle - 41 cm
Left side - 48 cm
Maximum - 61 cm

Water Temperature: 6°C

Conductivity: 45 µmhos

Biological Sampling:

Species group	Number
Salmon (fry)	4
Sculpin	135

Name of Stream: Wagansis Brook

Tributary to: Little Main Restigouche River

Location: 47°24'N; 67°48'W. Flows generally north-northeast into Little Main Restigouche River.

Length: 10.0 km

Sampling Site #1:

Date: 20/8/81

Location: 1.0 km

Grid Reference: 912497

Description: Stream sluggish, 3 m-5 m wide and 40 cm-80 cm deep. Stream-bed composition - sand, silt and gravel. Surrounding countryside wooded; overgrowth of alders.

Sampling Site #2

Date: 20/8/81

Location: 5.0 km

Grid Reference: 900464

Description: Stream flow barely detectable, 2 m-3 m wide and 30 cm-60 cm deep. Stream-bed composition - sand and silt. Surrounding countryside wooded; overgrown with alders. Topographic map indicates Site #2 is actually within the lower limit of a marsh or swamp area. In addition, there is another marsh or swamp area indicated between Sites #1 and #2.

Name of Stream: Hunter Brook

Tributary to: Little Main Restigouche River

Location: 47°26'N; 67°46'W. Flows north 9.0 km, then swings generally northwest 3.5 km into Little Main Restigouche River.

Length: 12.5 km

Sampling Site #1:

Date: 20/8/81

Location: 7.5 km

Grid Reference: 946491

Description: Riffle-run area; shallow pool area in left lower quarter. Stream-bed composition - 80% gravel and 20% rubble. Surrounding countryside wooded; alders along middle third of right bank.

Length: 27.0 m

Width: 6.2 m

Depths: Right side - 23 cm
Middle - 26 cm
Left side - 24 cm
Maximum - 42 cm

Water Temperature: 12°C

Conductivity: 45 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	2
Sculpin	21

Name of Stream: Boston Brook

Tributary to: Little Main Restigouche River

Location: 47°32'N; 67°37'W. Flows north-northeast 3.5 km, then swings generally north-northwest 4.5 km into Little Main Restigouche River.

Length: 8.0 km

Sampling Site #1:

Date: 19/8/81

Location: 4.5 km

Grid Reference: 052606

Description: Riffle-run area; pools negligible. Stream-bed composition - 80% rubble and 20% gravel. Surrounding countryside wooded.

Length: 28.0 m

Width: 5.4 m

Depths: Right side - 16 cm
Middle - 30 cm
Left side - 23 cm
Maximum - 34 cm

Water Temperature: 12°C

Conductivity: 30 µmhos

Biological Sampling:

Species group	Number
Salmon (fry)	29
Dace	15
Sculpin	11

Name of Stream: Right Hand Branch Jardine Brook

Tributary to: Jardine Brook

Location: 47°28'N; 67°33'W. Flows north-northeast into Jardine Brook.

Length: 11.0 km

Sampling Site #1:

Date: 27/8/81

Location: 7.0 km

Grid Reference: 078524

Description: Riffle-run area; pool within left middle third. Stream-bed composition - 50% gravel and 50% rubble. Surrounding countryside cutover woodland; alders along lower third of left bank. (Overall description; site actually split into upper and lower section by deep pool.)

Length: 23.3 m

Width: 7.9 m

Depths: Right side - 22 cm
Middle - 43 cm
Left side - 31 cm
Maximum - 60 cm (excluding deep pool)

Water Temperature: 4°C

Conductivity: 125 µmhos

Biological Sampling:

Species group	Number
Sculpin	19

Name of Stream: East Jardine Brook

Tributary to: Jardine Brook

Location: 47°29'N; 67°33'W. Flows generally northwest 17.5 km, then swings generally southwest 4.0 km into Jardine Brook.

Length: 21.5 km

Sampling Site #1:

Date: 20/8/81

Location: 12.0 km

Grid Reference: 164569

Description: Riffle-run area; areas of backwater along left lower two-thirds; pools in middle upper half and right and left lower quarters. Stream-bed composition - 60% gravel, 20% rubble and 20% mud. Surrounding countryside brushwood; alders along right bank and lower half of left bank.

Length: 26.6 m

Width: 9.7 m

Depths: Right side - 32 cm
Middle - 35 cm
Left side - 27 cm
Maximum - 60 cm

Water Temperature: 14°C

Conductivity: 145 µmhos

Biological Sampling:

Species group	Number
Trout (large)	6
Sculpin	24

Name of Stream: Little Five Finger Brook

Tributary to: Five Finger Brook

Location: 47°35'N; 67°26'W. Flows north into Five Finger Brook.

Length: 11.5 km

Sampling Site #1:

Date: 30/7/81

Location: 5.0 km

Grid Reference: 175678

Description: Riffle-run area; pools in upper and lower middle. Stream-bed composition - 95% rubble and 5% boulder. Surrounding countryside composed of brushwood, interspersed with fields; alders along lower quarter of right bank.

Length: 46.5 m

Width: 6.4 m

Depths: Right side - 21 cm
Middle - 40 cm
Left side - 22 cm
Maximum - 51 cm

Water Temperature: 7°C

Conductivity: 225 µmhos

Biological Sampling:

Species group	Number
Salmon (small parr)	6
Salmon (large parr)	1
Trout (fry)	24
Trout (large)	3
Sculpin	54

Name of Stream: Stillwater Brook

Tributary to: Restigouche River

Location: 47°46'N; 67°22'W. Flows generally north 12.0 km, then swings generally west 2.0 km into Restigouche River.

Length: 14.0 km

Sampling Site #1:

Date: 16/7/81

Location: 7.0 km

Grid Reference: 245877

Description: Riffle-run area; pools negligible. Stream-bed composition - 50% boulder, 40% rubble and 10% gravel. Surrounding countryside wooded; alders along lower half.

Length: 21.6 m

Width: 6.1 m

Depths: Right side - 23 cm
Middle - 32 cm
Left side - 25 cm
Maximum - 40 cm

Water Temperature: 15°C

Conductivity: 415 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	1

Name of Stream: Whites Brook

Tributary to: Restigouche River

Location: 47°50'N; 67°23'W. Flows generally west 8.0 km, swings north-northwest 4.0 km, then northeast 6.0 km and finally northwest 16.5 km into Restigouche River.

Length: 34.5 km

Sampling Site #1:

Date: 16/7/81

Location: 29.0 km

Grid Reference: 298824

Description: Stream slow, 2 m-4 m wide and 15 cm-45 cm deep. Stream-bed composition - sand, silt, gravel and rubble. Surrounding countryside composed of fields; brush along banks.

Name of Stream: Cheuters Brook

Tributary to: Restigouche River

Location: 47°53'N; 67°10'W. Flows east-northeast 5.5 km, then swings west-northwest 10.5 km into Restigouche River.

Length: 16.0 km

Sampling Site #1:

Date: 16/7/81

Location: 8.5 km

Grid Reference: 435018

Description: Riffle-run area; pool, not extensive, in upper right. Stream-bed composition - 50% gravel, 48% rubble and 2% sand. Surrounding countryside wooded; alders and bushes along most of right bank.

Length: 28.0 m

Width: 7.3 m

Depths: Right side - 34 cm
Middle - 37 cm
Left side - 21 cm
Maximum - 56 cm

Water Temperature: 8°C

Conductivity: 2,800 µmhos

Biological Sampling:

Species group	Number
Salmon (small parr)	1
Sculpin	31

Name of Stream: McDougalls Brook

Tributary to: Upsalquitch River

Location: 47°42'N; 66°46'W. Flows east 9.5 km, then swings north-northeast 2.5 km into Upsalquitch River.

Length: 12.0 km

Sampling Site #1:

Date: 11/8/81

Location: 2.0 km

Grid Reference: 674833

Description: Riffle-run area; small area of still water along right upper quarter; pool, not extensive, in left middle. Stream-bed composition - 60% gravel and 40% rubble. Surrounding countryside wooded; alders along left and brush along right upper half.

Length: 33.4 m

Width: 5.6 m

Depths: Right side - 19 cm
Middle - 28 cm
Left side - 20 cm
Maximum - 50 cm

Water Temperature: 10°C

Conductivity: 5,500 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	1
Sculpin	46

Name of Stream: Ruisseau Sauvage (Indian Brook)

Tributary to: Northwest Upsalquitch River

Location: 47°34'N; 67°05'W. Flows south-east into Northwest Upsalquitch River.

Length: 10.0 km

Sampling Site #1:

Date: 1/9/81

Location: 3.5 km

Grid Reference: 418724

Description: Riffle area, pools negligible. Stream-bed composition - 50% rubble and 50% gravel. Surrounding countryside wooded; alders along right side and lower two-thirds of left side.

Length: 46.9 m

Width: 5.9 m

Depths: Right side - 13 cm
Middle - 21 cm
Left side - 14 cm
Maximum - 34 cm

Water Temperature: 9°C

Conductivity: 50 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	2
Trout (large)	2
Sculpin	50

Name of Stream: McLeod Brook

Tributary to: Northwest Upsalquitch River

Location: 47°34'N; 67°07'W. Flows south-east into Northwest Upsalquitch River.

Length: 5.0 km

Sampling Site #1:

Date: 1/9/81

Location: 2.0 km

Grid Reference: 401712

Description: Still-water pond, 10 m-12 m wide and 2 m-3 m deep, created by beaver dam. Stream-bed composition - detritus, sand and silt. Surrounding countryside composed of woods on right and landing on left; bushes along landing edge.

Name of Stream: Chisholm Brook

Tributary to: Northwest Upsalquitch River

Location: 47°34'N; 67°10'W. Flows south-east into Northwest Upsalquitch River.

Length: 10.5 km

Sampling Site #1:

Date: 1/9/81

Location: 7.0 km

Grid Reference: 338749

Description: Stream moderate flowing, 2 m-3 m wide and 15 cm-30 cm deep. Stream-bed composition - gravel, sand and silt. Surrounding countryside composed of clearing; wooded back from brook.

Name of Stream: East Branch Oxford Brook

Tributary to: Oxford Brook

Location: 47°34'N; 66°59'W. Flows north 4.0 km, then swings west 7.5 km into Oxford Brook.

Length: 11.5 km

Sampling Site #1:

Date: 7/8/81

Location: 2.0 km

Grid Reference: 531689

Description: Riffle-run area; pools negligible. Stream-bed composition - 50% rubble and 50% gravel. Surrounding countryside wooded; alders along banks.

Length: 27.0 m

Width: 10.1 m

Depths: Right side - 33 cm
Middle - 22 cm
Left side - 15 cm
Maximum - 39 cm

Water Temperature: 11°C

Conductivity: 320 µmhos

Biological Sampling:

Species group	Number
Salmon (large parr)	1
Sculpin	14

Name of Stream: Jerry Ferguson Brook

Tributary to: Southeast Upsalquitch River

Location: 47°39'N; 67°38'W. Flows generally northeast into Southeast Upsalquitch River.

Length: 26.0 km

Sampling Site #1:

Date: 11/8/81

Location: 8.0 km.

Grid Reference: 751760

Description: Riffle-run area; small area of still water in upper right; pools negligible. Stream-bed composition - 60% rubble and 40% gravel. Surrounding countryside wooded; steep bank along left.

Length: 26.4 m

Width: 12.1 m

Depths: Right side - 15 cm
Middle - 13 cm
Left side - 21 cm
Maximum - 30 cm

Water Temperature: 19°C

Conductivity: 170 µmhos

Biological Sampling:

Species group	Number
Salmon (fry)	19
Salmon (small parr)	3
Salmon (large parr)	2
Trout (fry)	2
Dace	2
Sculpin	34

Sampling Site #2:

Date: 22/7/81

Location: ~~16.5~~ 20.5 km

Grid Reference: 701688

Description: Riffle-run area; pools negligible. Stream-bed composition - 70% rubble and 30% boulder. Surrounding countryside wooded; alders at lower left.

Length: 50.0 m

Width: 8.1 m

Depths: Right side - 16 cm
Middle - 21 cm
Left side - 15 cm
Maximum - 38 cm

Water Temperature: 13°C

Conductivity: 75 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	7
Sculpin	20

Name of Stream: Ramsay Brook

Tributary to: Southeast Upsalquitch River

Location: 47°34'N; 66°32'W. Flows northeast into Southeast Upsalquitch River.

Length: 15.5 km

Sampling Site #1:

Date: 24/7/81

Location: 7.0 km

Grid Reference: 803679

Description: Riffle-run area; pool, not extensive, in right upper quarter. Stream-bed composition - 90% rubble and 10% boulder. Surrounding countryside wooded.

Length: 30.0 m

Width: 12.5 m

Depths: Right side - 23 cm
Middle - 24 cm
Left side - 17 cm
Maximum - 55 cm

Water Temperature: 11°C

Conductivity: 70 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	3
Trout (large)	2
Sculpin	1

Name of Stream: Murray Brook

Tributary to: Southeast Upsalquitch River

Location: 47°34'N; 66°32'W. Flows southwest 3.0 km, swings west-northwest 4.0 km, then southwest 4.0 km into Southeast Upsalquitch River.

Length: 11.0 km

Sampling Site #1:

Date: 12/8/81

Location: 8.0 km

Grid Reference: 914733

Description: Riffle-run area; pools negligible. Stream-bed composition - 70% rubble, 25% gravel and 5% boulder. Surrounding countryside wooded; alders along right middle half.

Length: 30.0 m

Width: 5.4 m

Depths: Right side - 17 cm
Middle - 22 cm
Left side - 19 cm
Maximum - 45 cm

Water Temperature: 20°C

Conductivity: 150 µmhos

Biological Sampling:

Species group	Number
Eel	1
Dace	5
Sculpin	31

Name of Stream: Little Southeast Upsalquitch River

Tributary to: Southeast Upsalquitch River

Location: 47°38'N; 67°35'W. Flows southeast 2.0 km, swings west 13.0 km, then generally southwest 9.0 km into Southeast Upsalquitch River.

Length: 24.0 km

Sampling Site #1:

Date: 15/7/81

Location: 15.0 km

Grid Reference: 917830

Description: Riffle-run area; area of still water in left upper quarter; pools negligible. Stream-bed composition - 50% rubble, 40% gravel and 10% sand. Surrounding countryside wooded; alders along upper half of right bank and most of left bank.

Length: 21.9 m

Width: 10.5m

Depths: Right side - 20 cm
Middle - 18 cm
Left side - 24 cm
Maximum - 45 cm

Water Temperature: 9°C

Conductivity: 390 µmhos

Biological Sampling:

Species group	Number
Salmon (fry)	1
Salmon (small parr)	2
Trout (fry)	11
Dace	1
Sculpin	61

Name of Stream: Middle Brook

Tributary to: Little Southeast Upsalquitch River

Location: 47°41'N; 66°31'W. Flows generally south into Little Southeast Upsalquitch River.

Length: 12.0 km

Sampling Site #1:

Date: 15/7/81

Location: 2.0 km.

Grid Reference: 881839

Description: Riffle-run area; pool, not extensive, in upper left. Stream-bed composition - 80% rubble and 20% boulder. Surrounding countryside wooded; bushes along lower quarter of right bank and most of left bank. Cliff on left below site.

Length: 30.0 m

Width: 6.8 m

Depths: Right side - 25 cm
Middle - 34 cm
Left side - 37 cm
Maximum - 62 cm

Water Temperature: 10°C

Conductivity: 450 µmhos

Biological Sampling:

Species group	Number
Salmon (small parr)	13
Trout (fry)	5
Sculpin	143

Name of Stream: Little Popelogan Brook

Tributary to: Southeast Upsalquitch River

Location: 47°40'N; 66°40'W. Flows generally south-southwest into Southeast Upsalquitch River.

Length: 8.5 km

Sampling Site #1:

Date: 13/7/81

Location: 1.0 km

Grid Reference: 761831

Description: Riffle-run area; pool, not extensive, in middle lower half. Stream-bed composition - 90% rubble and 10% boulder. Surrounding countryside wooded; clearings at left middle third and right upper third.

Length: 50.0 m

Width: 8.3 m

Depths: Right side - 18 cm
Middle - 32 cm
Left side - 25 cm
Maximum - 54 cm

Water Temperature: 10°C

Conductivity: 65 µmhos

Biological Sampling:

Species group	Number
Salmon (small parr)	1
Salmon (large parr)	2
Sculpin	8

Sampling Site #2:

Date: 13/8/81

Location: 5.0 km

Grid Reference: 757866

Description: Riffle-run area; pools negligible. Stream-bed composition - 75% rubble and 25% gravel. Surrounding countryside wooded; alders at upper right and clearing along remainder of right bank.

Length: 38.5 m

Width: 4.2 m

Depths: Right side - 16 cm
Middle - 16 cm
Left side - 8 cm
Maximum - 24 cm

Water Temperature: 15°C

Conductivity: 155 µmhos

Biological Sampling:

Species group	Number
Salmon (small parr)	8
Salmon (large parr)	3
Trout (fry)	4
Sculpin	66

Name of Stream: Popelogan River

Tributary to: Upsalquitch River

Location: 47°42'N; 66°45'W. Flows southwest 9.5 km, then swings generally south 11.5 km into Upsalquitch River.

Length: 21.0 km

Sampling Site #1:

Date: 13/7/81

Location: 8.0 km

Grid Reference: 697903

Description: Riffle-run area; pool, not extensive, in upper right. Stream-bed composition - 100% rubble. Surrounding countryside wooded; clearing at right lower quarter.

Length: 28.0 m

Width: 13.9 m

Depths: Right side - 38 cm
Middle - 27 cm
Left side - 17 cm
Maximum - 51 cm

Water Temperature: 11°C

Conductivity: 140 µmhos

Biological Sampling:

Species group	Number
Salmon (fry)	1
Salmon (large parr)	1
Sculpin	12

Name of Stream: Popelogan Lake Branch River

Tributary to: Popelogan River

Location: 47°47'N; 66°42'W. Flows west into Popelogan River.

Length: 7.5 km

Sampling Site #1:

Date: 20/7/81

Location: 2.5 km

Grid Reference: 742957

Description: Riffle-run area; pools negligible. Stream-bed composition - 50% rubble and 50% gravel. Surrounding countryside wooded; alders along right bank.

Length: 30.0 m

Width: 5.1 m

Depths: Right side - 19 cm
Middle - 22 cm
Left side - 17 cm
Maximum - 30 cm

Water Temperature: 13°C

Conductivity: 170 µmhos

Biological Sampling:

Species group	Number
Trout (large)	2
Sculpin	2

Name of Stream: Berry Brook

Tributary to: Upsalquitch River

Location: 47°48'N; 66°52'W. Flows generally southwest 9.5 km, swings west-northwest 5.0 km, then southwest 3.5 km into Upsalquitch River.

Length: 18.0 km

Sampling Site #1:

Date: 23/7/81

Location: 3.5 km

Grid Reference: 616983

Description: Riffle-run area; pool along right middle third. Stream-bed composition - 90% rubble and 10% boulder. Surrounding countryside wooded.

Length: 34.0 m

Width: 7.0 m

Depths: Right side - 40 cm
Middle - 21 cm
Left side - 17 cm
Maximum - 70 cm

Water Temperature: 10°C

Conductivity: 120 µmhos

Biological Sampling:

Species group	Number
Sculpin	18

Sampling Site #2:

Date: 17/7/81

Location: 11.5 km

Grid Reference: 669997

Description: Riffle area; pools negligible. Stream-bed composition - 80% gravel, 15% boulder and 5% mud. Surrounding countryside wooded; bushes along upper left half.

Length: 32.4 m

Width: 5.7 m

Depths: Right side - 18 cm
Middle - 16 cm
Left side - 12 cm
Maximum - 24 cm

Water Temperature: 13°C

Conductivity: 245 µmhos

Biological Sampling:

Species group	Number
Trout (fry)	3
Dace	15
Sculpin	3

Name of Stream: East Branch Christopher Brook

Tributary to: Christopher Brook

Location: 47°56'N; 66°48'W. Flows generally west 7.5 km, swings north 5.0 km, then west 2.5 km into Christopher Brook.

Length: 15.0 km

Sampling Site #1:

Date: 13/8/81

Location: 1.5 km

Grid Reference: 653121

Description: Riffle area; pools negligible. Stream-bed composition - 75% rubble and 25% gravel. Surrounding countryside wooded.

Length: 38.5 m

Width: 7.7 m

Depths: Right side - 17 cm
Middle - 20 cm
Left side - 13 cm
Maximum - 24 cm

Water Temperature: 14°C

Conductivity: 130 µmhos

Biological Sampling:

Species group	Number
Salmon (fry)	107
Salmon (small parr)	1
Trout (fry)	4
Sculpin	105

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